

Patent
2024071-7005362002REMARKS

Amendments to claims 1, 26, 35, and 41 are for the purpose of clarifying what Applicant regards as the invention. No new matter has been added.

I. ALLOWED CLAIMS

Applicant wishes to thank the Examiner for allowing claim 21.

II. CLAIM REJECTIONS UNDER 35 U.S.C. § 102

Claims 1, 2, 19, 21-23, 25-30, 32-38, 40-43, 45, and 46 stand rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by US2003/0065276 (Akita). In view of the Examiner's remarks on page 6, paragraph 3 (finding claims 19, 25, 27, 33, 37, 40, 45, and 46 allowable if rewritten in independent form), and in view of the fact that Akita clearly does not disclose or suggest "at least five speakers" as recited in claim 19, Applicant believes that the Examiner meant to raise the § 102 rejection for claims 1, 2, 21-23, 26, 28-30, 32, 34-36, 38, 42, and 43. With respect to these claims, Applicant respectfully notes that in order to sustain a claim rejection under § 102, each of the claimed elements must be found, either expressly or inherently, in the cited reference.

Claims 1, 26, 35, and 41 have been amended to recite at least three speakers, and an audiometer that is configured for calibrating individuals of said plurality of speakers to compensate for an environmental effect. Akita does not disclose or suggest such limitation. Rather, Akita specifically requires a "left" speaker and a "right" speaker, and therefore, it in fact teaches away from using more than two speakers. In addition, Akita also fails to disclose an audiometer that is configured to calibrate speakers to compensate for an environmental effect. Notably, the speakers in Akita cannot be used to simulate an environmental effect because in real world situations, since the

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sound will come from other directions instead of just left and right. Further, Applicant respectfully submits that the claimed subject matter is non-obvious over Akita. In the auditory system disclosed by Akita an auditory test is performed by using the left and right speakers to present a number of tones to a test person. This is a standard procedure of auditory testing. However, the sound fields in real world environments do not only comprise pure tones, but comprises usually a mixture of many kinds of sounds. A realistic sound environment may even be dynamical and time varying with sounds coming from different directions. If only a left and a right speaker is used, as suggested by Akita, then an auditory test of an individual that should incorporate some of the dynamic effects of a real world sound environment would imply that several measurements should be performed, wherein the speakers and/or the test person should be moved around in a test room between each measurement. However, each time a speaker and/or test person changes position a new calibration needs to be performed. Thus, it would be extremely laborious to perform an auditory test on an individual that may incorporate the dynamics of a real world environment with a system as disclosed by Akita. By using at least three speakers a more complicated sound field may be generated and used in the auditory testing and therefore a better (than is possible by a system with only two speakers, as disclosed by Akita) understanding of the hearing loss of the tested individual may be achieved, especially the test persons perceptive hearing loss, i.e. his difficulties of processing important sounds like, for example speech. Moreover, only one test and one calibration is needed because, with the sound field produced by at least three speakers it is possible to model a real world noisy sound environment significantly better than with only two speakers, especially if the two speakers are only used as right and left speakers. The use of at least three speakers in conjunction with the audiometer as claimed may in fact allow for a consideration of those physical effects that may be of importance for an individual's perception of the most important cues that are needed for

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understanding speech, especially in a noise background. This background noise may for example be provided by the third speaker. Said physical effects may for example be head shadow effects and time delays that are associated with an individual test person to be considered. Such delays may be, for example, associated with individual distance between the two ears of an individual, and the shadow effects may be due to the shape of the head and/or ears, and direction of the outer ears (the shape and position of the pinna). The individual perception of these effects (delays and shadow) may be different for signals with different signal pressure levels, and may be frequency dependent. Furthermore, the perception of these effects gives the test person important cues for understanding speech. The use of three or more speakers and the audiometer allows for a better consideration of these effects than which is possible with the system of Akita. For at least the foregoing reasons, claims 1, 26, 35, and 41, and their respective dependent claims, are believed allowable over Akita.


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CONCLUSION

Based on the foregoing, it is believed that, with entry of this amendment, all claims are now allowable and a Notice of Allowance is respectfully requested. If the Examiner has any questions or comments regarding this amendment, the Examiner is respectfully requested to contact the undersigned at (650) 849-4960.

DATE: June 22, 2006

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